

ABSTRACT

Externally detectable electronic article surveillance markers are attached to surgical implements, such as sponges and surgical instruments, appointed for use in a surgical wound. The attachment mechanism facilitates detection by an external interrogating field before the wound has been closed and the patient has left the operating table. The markers are responsive to the imposition of an interrogating field produced by an electronic article surveillance system. Markers contain one or more magnetomechanically responsive elements that are urged into mechanical resonance by the interrogating field. The ring-down of the resonance and the associated dipolar electromagnetic field provide a signal-identifying characteristic detected by a detection system. Upon detection, an audible or visible signal is triggered to alert relevant medical personnel to the need for follow-up care and removal of the offending item. The resonance occurs at a frequency ranging from about 70 to 300 kHz. Misadventures during operative procedures – especially those wherein implements remain undiscovered at the time of surgery and are retained indefinitely within the surgical cavity, often entailing dire consequences to the patient – are virtually eliminated. The attachment mechanism and markers assure that surgical implements are reliably detected and removed before completion of the surgical procedure.